

## STEWARDSHIP

*The values of the trust and our vision  
for how we will conduct our business*

### MANAGEMENT PRINCIPLES

The core values of the Valles Caldera Trust are expressed in its management principles, which are presented on page 13 of this framework. These 10 principles are united by a number of qualities, foremost among which are

- An appreciation of the richness and complexity of the Valles Caldera National Preserve in both its ecological and cultural dimensions,
- A respect for the needs and interests of a wide range of stakeholder groups,
- A commitment to consider financial impacts and realities,
- A commitment to monitor the impacts of management and use the learning thus gained to inform subsequent management decisions, and
- A general ethic of care and restraint in the development of programs.

The management principles constitute the first set of criteria the trust will use to evaluate the

projects, programs, and policies it considers. A number of additional values and goals, some of which are implicit in the principles, will also shape the development of the trust and its programs. Among these are the pursuit of financial self-sufficiency, the operation of the preserve as a working ranch, the protection of cultural resources and traditions, and the trust's commitment to involve the public in decisions affecting the preserve. These goals and values are emphasized in the trust's instructions from Congress. The Valles Caldera Preservation Act also urges that the preserve become "a demonstration area for an experimental management regime adapted to this unique property." In response to this charge the trust has committed itself to "science-based adaptive management." All of these ideas are discussed in the balance of this chapter, with the exception of public involvement, to which the entirety of chapter 7 is devoted.

### **FINANCIAL MANAGEMENT AND SELF-SUFFICIENCY**

Perhaps the most uncommon management challenge facing the trust involves the goal of attaining financial self-sufficiency within a 15-year period. This means becoming capable of operating successfully, while meeting the trust's other five goals, without requiring federal appropriations to offset annual operating costs. This goal clearly requires the trust to evaluate its overall management approach, as well as individual management decisions, in terms of revenue generation potential as well as mitigation of administrative costs. The trust is fully committed to achieving financial self-sufficiency through prudent financial management. Two key management considerations will contribute to financial success: revenue generation and cost control.

The trust is committed to adaptive financial management in a manner similar to its commitment to science-based adaptive management in its stewardship of the lands of the preserve. The financial goal of self-sufficiency is fundamentally untested and complex. Accordingly, the trust will implement programs conservatively and incrementally, documenting costs and revenues while taking only measured financial risks. We expect that some programs will yield high financial returns

(i.e., high revenues with low operational costs), while others will offer low or even negative financial returns (i.e., high operational costs with low revenue potential). The trust recognizes that long-term financial self-sufficiency will likely require multiple sources of funds, such as donations, gifts, and bequests, beyond revenues acquired from public program fees.

The goal of financial self-sufficiency is one of several that will define the success of the trust over time. But it is only one of several. We understand Congress to have intended that none of the six purposes for which the preserve was established be pursued solely for its own sake, at the material expense of the others. One of the objectives of the Valles Caldera Trust experiment is to determine if through wise and measured stewardship, and by approaching administrative and programmatic matters in a businesslike manner, the trust can eliminate its reliance on annual federal appropriations. This opportunity is bestowed upon few, if any, other federal organizations, and it is unique in the land and resource management arena. It is therefore imperative that we view the concept of financial self-sufficiency as a means to achieve our primary mission, that of wise and measured stewardship, rather than an end to be achieved in and of itself.

By any reasonable assessment, financial criteria must play a role in decision making, but it is not in the long-term interest of the trust or the preserve to base decisions solely on a revenue motive. We consider good stewardship to be a prerequisite for achieving long-term financial stability, for the resources we are charged with managing must be well tended if they are to provide a foundation for producing continuous and sustainable revenues. Therefore, as we decide among competing uses for the preserve, we will take into account financial matters in the context of what will best serve the long-term social, ecological, and resource needs of the preserve.

#### **CHALLENGES AND RISKS**

The trust's current financial model calls for receiving appropriations to fund operations and to develop the infrastructure necessary to support a variety of revenue-generating public programs. This model should allow gradual achievement of financial self-sufficiency, assuming infrastructure can be developed fast enough for programs to grow and substantial annual revenues to be realized. Nevertheless, unforeseen developments could render the goal of financial self-sufficiency unachievable within the intended 15-year period.

For example, natural events, such as catastrophic fire or prolonged

regional drought, could significantly impact the aesthetic beauty and sense of place on the preserve, resulting in a decrease in visitors and a decline in revenues.

Additional natural limitations for revenue generation could result from prolonged closure of the preserve due to fire danger or from suspension of programs due to unacceptable cumulative effects.

Significant changes in the regulatory environment might also impact the operating costs of the trust or delay program implementation. In addition, the reliance on the federal appropriations process could hamper development efforts if, for example, the appropriations necessary for infrastructure improvements do not materialize in a manner timely enough for key revenue-generating programs to be launched in the near term.

These issues, alone or in combination, could necessitate appropriations at some baseline level into the indefinite future and past the 15 years given in the act for attaining financial self-sufficiency. How could the justification for continued appropriations be understood, beyond the simple fact that the trust "needs more money"? Clearly, while the trust has all of the tools available to operate "commercially" as a working ranch, it also bears obligations not found in the private sector, not least in that the trust will

be held to a high and legally obligatory standard of performance, especially in terms of environmental stewardship. Costs associated with these important responsibilities, which the trust appreciates and accepts, include research, inventory, and monitoring; archaeological assessments; compliance with the National Environmental Policy Act; outreach and dialogue with the public; and cultural interaction and compliance with the pueblos. The sum of these costs, all of which are attributable to the preserve's federal status, might be thought of as "federal overhead." The trust has taken important steps to mitigate some of these costs through, for example, streamlined procedures for NEPA compliance and through the trust's internal Stewardship Record Action System (StARS), which is designed to facilitate communications with the public during the planning of programs and other actions on the preserve. Nonetheless, it may prove reasonable for continuing appropriations to cover these costs, while the balance of the trust's programs operate in a financially self-sufficient manner. (Chapter 6 discusses the trust's NEPA and StARS procedures in fuller detail.)

#### **GUARANTEEING FAIR PUBLIC ACCESS**

We interpret our mandate to provide reasonable public access for

recreation to be variable only in the determination of what activities are offered and what level of use is deemed reasonable. In this context, the trust will not consider it reasonable to limit the opportunities for the public's enjoyment of the preserve based solely on an individual's ability to pay a fee. The preserve was clearly established to provide opportunities for the American people to enjoy and learn from the lands of the caldera. We consider it a part of our mission to establish fee structures that will provide the trust with the means to manage and administer the operations of the preserve, but we do not intend to use fees as a means of limiting access to the preserve.

The trust has explicitly committed to a high level of social equity in the operation of its public programs. This commitment means affording to members of the public from all social and economic strata a reasonable opportunity to participate in preserve programs. Lotteries offer one means for keeping the cost of program entry low and the potential for revenues high. Lotteries, however, are unlikely to be appropriate for all preserve programs. As a result, the trust may need to provide access to certain programs at rates below the true unit cost of program participation. It may become necessary to subsidize some programs with revenues



from other programs or from appropriations, if moneys earned from revenue-generating programs are insufficient to cover the full operating costs of the trust.

#### **THE WORKING RANCH**

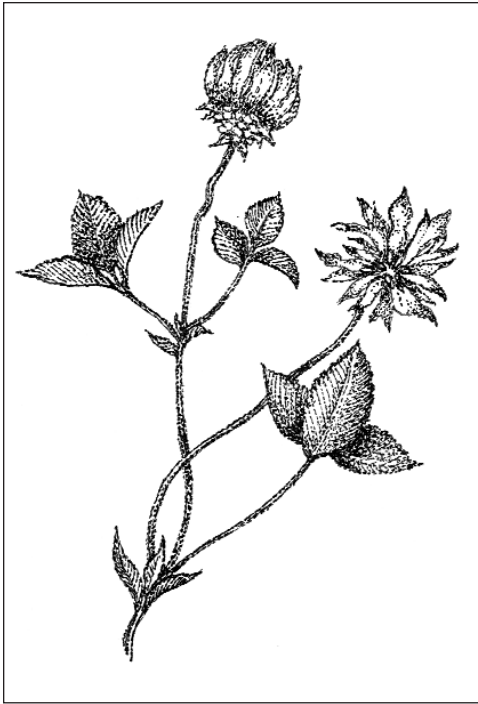
We define a “working ranch” as an operation placing its primary emphasis on stewardship of the resource as the foundation for both ecological and economic sustainability. A working ranch

- Runs a sustainable level of livestock, adjusting numbers as necessary;
- Makes resources available for other revenue-generating activities such as bird watching, hunting, fishing, and other low-impact recreational activities;
- Applies adaptive management on a day-to-day basis to ensure resource protection; and

- Monitors the impact of its activities.

Adaptive management is not a new concept in ranching. Ranchers practice adaptive management every day, taking into consideration such factors as wind, rain, temperature, and cattle markets. Ranchers learn to be conservative, inventive, and flexible to manage effectively, especially in times of drought. At the preserve, we have the opportunity to enhance and expand such adaptive management through the availability of scientific monitoring. Through a variety of scientific experiments and monitoring protocols, we have a tremendous opportunity to understand the workings of the preserve’s ecosystems. In addition, we may be able to conduct research on new ranching techniques to determine their efficacy in both maintaining and improving rangeland.

Alsike clover is a nutritious forb, found within the grasslands of the VCNP.



The trust will assess the cumulative impacts of all activities on the preserve. This will include assessing the cumulative impacts of the ranching operation in conjunction with recreation and with the impacts from the resident wildlife such as elk.

In addition, through its working ranch operation, the trust will have the opportunity to provide benefits to neighboring communities through education and through potential use of the preserve as a grassbank.

#### **STEWARDSHIP OF THE CULTURAL LANDSCAPE**

Most people, seeing the VCNP for the first time, marvel at the sweep and beauty of its natural landscape. Less visible but no less important is

the human presence in the land: the archaeological evidence of past occupations, the buildings and sites of historical importance, and the relationship of the preserve to living cultures that revere the land and depend on it in numerous and complex ways.

One glimpses the importance of such a relationship in the Valles Caldera Preservation Act, which forbids the erection of structures on the upper elevations of Redondo Peak and similarly bans the entry of motorized vehicles there, except for administrative purposes (sec. 105[g]). The act also explicitly references the trust's duty under the American Indian Religious Freedom Act (sec. 108[f]5), which includes making the preserve available for the religious observances and traditional cultural uses of culturally affiliated tribes. Several nearby pueblos nurture connections to the lands of the preserve that are long in duration and deep in significance, and the trust has consulted with them concerning the perpetuation and, in certain cases, restoration of traditional practices. This kind of cooperation and consultation will continue and will pervade all preserve operations, both to protect the cultural values of preserve "resources" and to avoid conflicts between preserve programs and essential tribal practices. These consultations will require a high level of confidentiality. Consistent



with this area of responsibility, the trust has developed a tribal access and use policy that sets forth how the trust will respond to the needs of culturally affiliated tribes for access to the preserve and uses relating to traditional cultural and religious activities. As a result of the implementation of this policy, certain areas of the preserve may be closed to general uses from time to time. In general, these closures are expected to be temporary and localized.

The Hispanic heritage of northern New Mexico has also influenced and been influenced by the lands of the caldera, particularly in relation to the preserve's long history as a working ranch, producing both sheep and cattle. Awareness of this heritage and its traditions will be especially important as the trust develops and operates its livestock grazing program.

Protection of archaeological resources poses a different class of challenge. As was noted in chapter 3, the lithic resources, big game, and other qualities of the caldera have attracted people to its mountains and valleys for thousands of years, and as a result the archaeological resources are exceptionally rich. Until now, because investigations have been few and limited, archaeologists have been able to reconstruct relatively little about the patterns of those long-ago uses, but the potential

for expanding our understanding of the distant past is enormous. Compared to lands that have been in public ownership for a long time, most VCNP sites have not previously been subjected to surface disturbance and artifact removal. They therefore represent a remarkable opportunity for recovering an abundance of valuable information—so long as the sites remain undisturbed. If the surface resources of the caldera were compromised, the cost of recovering equivalent information would soar, for archaeology becomes increasingly expensive and difficult the deeper one goes beneath the surface.

The imperative to protect the integrity of surface archaeological resources could constrain the trust's ability to provide unguided visitor access to parts of the preserve. Similarly, the necessity of archaeological surveys and the complexity of the archaeological record at the preserve may significantly delay or constrain the trust's ability to initiate a wide range of actions, from maintenance of roads to provision of recreational opportunities. The trust is presently developing its own staff capacity to address these challenges, and even as its capacity grows, it will continue to draw on the resources of its neighbors, including Bandelier National Monument, the Forest Service, and nearby tribes. In partnership with



Mist clearing in the Valle San Antonio.

the New Mexico State Historic Preservation Office (SHPO), the trust will develop a “programmatic agreement” consistent with the National Historic Preservation Act to guide the protection of the preserve’s cultural resources, including procedures for consultation with the SHPO and interested tribes.

The programmatic agreement to be developed between the SHPO and the trust will also address the preservation of historically significant buildings within the preserve. Not all of the preserve’s buildings are historically significant. Some of these buildings need extensive repair simply to maintain

their structural and aesthetic integrity; others will require remodeling, including adaptation to standards set by the Americans with Disabilities Act, if they are to provide support for the preserve’s public programs; a few function effectively in their present state. Maintenance and upgrading of the preserve’s existing buildings represents a significant capital cost for the trust.

#### **SCIENCE-BASED ADAPTIVE MANAGEMENT**

For years, land managers and scientists from a broad range of fields have agreed that knowledge obtained from site-specific scientific



inquiry can substantially improve the quality of management decisions. Moreover, strong agreement exists that this kind of knowledge must be applied in the management of natural systems and that the gathering of such knowledge should be a continuous, or at least regular, process so that managers, scientists, and the public in general can inform themselves of the impact of activities on systems of concern and make management adjustments accordingly.

This approach to the stewardship of natural systems is most commonly referred to as “science-based adaptive management.” Its chief characteristic is a commitment to monitor natural systems and the human activities that impinge on them, coupled with an equal commitment to use the monitoring information thus gained to guide and, when necessary, revise the goals and activities of management. Although there is broad agreement that this kind of management is desirable, achieving it in practice, especially on public lands, has proved difficult. Obstacles have included the sometimes daunting cost of baseline inventories and ongoing monitoring, the difficulty of changing long-established patterns of land use, and uncertain administrative support for the kind of long-term discipline that adaptive management requires. Perhaps

most fundamentally, the traditional separation in most land management agencies of scientific activities from on-the-ground, management decision making has contributed to development of institutional cultures that do not easily embrace a close partnership between science and management.

Inherent in adaptive management is a commitment to apply the scientific method to the experimental problems. This includes formulating and testing *a priori* hypotheses; the use of control sites where a particular management action is not imposed, in order to distinguish the management effects; the establishment of replicate study sites for statistical analysis of treatment effects; and peer review by other scientists to evaluate the scientific results.

The Valles Caldera Trust has an opportunity to begin afresh. As it develops as an institution, every effort is being made to build an organizational culture and structure that will fully support adaptive management. Moreover, from its earliest days the trust has invested heavily in the kinds of inventory and monitoring work needed to provide baseline information for the comparative evaluation of future resource conditions. These investigations have included surveys of water quality, range condition and composition, forest stand structure, riparian and aquatic habitat,

## **SCIENCE-BASED ADAPTIVE MANAGEMENT IN ACTION: THE VALLES CALDERA LIVESTOCK GRAZING PROGRAM**

The livestock grazing program is carefully monitored to assess the combined impacts of livestock and other wildlife (primarily elk) on the vegetation of the VCNP. Before each summer grazing period, a range assessment is undertaken to determine the maximum number of cattle that can be supported within each major pasture area. This assessment conservatively assumes that only spring forage will be available for the entire season (a prudent approach, given the current long-term drought forecasts for the region). Once this assessment is conducted, the VCT adjusts the planned number of cattle to be introduced to the VCNP pastures to ensure that the available forage is not overutilized. At the end of each season, the forage remaining is measured for the purpose of assessing total utilization by cattle and elk, and these values are then used to begin planning for the next season. In addition, the VCT is conducting an experiment using ungulate (livestock and elk) exclosures to determine the relative roles of these major herbivores on removing forage in the riparian zones of the VCNP. These experiments, in combination with future acquisitions of satellite imagery, will make possible a more detailed assessment of large herbivore impacts on the VCNP grasslands, thereby allowing a high degree of accuracy in planning future livestock stocking rates.

various wildlife populations, and many other features of the preserve. They have also been carefully designed to provide a dependable framework for long-term monitoring. As the trust's recreational programs expand, the emphasis on monitoring will be extended to the evaluation of visitor activities and visitor satisfaction. The unifying theme behind all of this work is to assert the importance of continuous learning in everything the trust undertakes. Leading advocates

of science-based adaptive management have argued that "knowledge may be a resource equal or greater in value than the physical resource." The principles associated with this kind of place-based learning are multidisciplinary, holistic, and collaborative. They lead toward open and informed management, and as the learning proceeds, it will inform the educational and interpretive aspects of all preserve programs, continually enriching visitor experience.

## RESEARCH, INVENTORY, AND MONITORING, 2001-3

PROJECT NAME	ORGANIZATION
Vegetation map	University of New Mexico/NM Natural Heritage Program
Soils map	National Resources Conservation Service, U.S. Forest Service
Forest fuels map	University of Arizona
Geology map	Los Alamos National Laboratory, U.S. Geological Survey, NM Bureau of Mines
Plant species survey	University of Wyoming
Breeding bird survey	Ornithology volunteers
Breeding bird atlas	Ornithology volunteers
Raptor survey	Ornithology volunteers
Amphibian survey	Utah State University, Bandelier National Monument
Butterfly survey	University of Wisconsin
Elk browse survey	Bandelier National Monument
Elk radiotelemetry study	Los Alamos National Laboratory
Fish community study	Aquatic Consultants
Aquatic insect survey	Colorado State University
Aquatic invertebrate production	VCNP
Fairy shrimp survey	NM Department of Game and Fish
Fire history	Bandelier National Monument
Forest-grassland ecotones	University of Wisconsin
Historic routes report	Volunteers
Watershed survey	USFS National Riparian Service Team Review
Meteorological data	Bandelier National Monument
Hydrogeochemistry well study	Los Alamos National Laboratory
Range grazing assessment	New Mexico State University, Bureau of Land Management (BLM)
Range monitoring	Ecology Consultants
Grasshopper study	U.S. Geological Survey
Repeat photo project	Bandelier National Monument
Stream inventory	U.S. Forest Service
Water quality data	NM State Environment Department
Whirling disease testing	NM Department of Game and Fish
Prairie dog survey	Bandelier National Monument
Ungulate exclosure study	VCNP, Bandelier National Monument

**PUBLIC INVOLVEMENT**

The VCT's approach to planning and decision making emphasizes soliciting and incorporating the public's ideas and concerns throughout the program planning process—and in the periodic evaluation of programs that are implemented. A full discussion of the trust's plans for public involvement, including the description of the range of opportunities available for reviewing and commenting on management of the preserve, may be found in chapter 7 of this document.

**STEWARDSHIP SUMMARY**

The 10 management principles presented in chapter 1 set forth the values that the board will use to

guide management of the preserve. They are not necessarily simple ideas, and contradictions and conflicts can arise among them. Nevertheless, the central task of stewardship of the preserve will be to find paths of action (as well as to identify instances of no action) that best honor the spirit of restraint, respect, financial discipline, and continuous learning that underlies the principles. Toward that end, the trust will make every effort to keep its planning processes efficient, to involve the public meaningfully in the design and analysis of significant management undertakings, and to monitor those undertakings in ways that will support their periodic adjustment and revision.